

REMARKS

Claims 1-4, 8, 10 and 11 are pending and rejected in this application.

Responsive to the rejection of claims 1-4, 8, 10 and 11 under 35 U.S.C. §103(a) as being unpatentable over WO 94/11116 (Sundholm et al.) in view of U.S. Patent No. 5,993,913 (Rosenberger et al.), and U.S. Patent No. 3,979,535 (Govindan), Applicant respectfully traverses the rejection and submits that claims 1-4, 8, 10 and 11 are in condition for allowance.

Sundholm et al. discloses a method and apparatus for coating paper (Figs. 1 and 2) including application nozzle 24 having air channels 25 disposed around slurry channel 26. Slurry is supplied to slurry channel 26, which is sprayed upon the paper, under pressure. Air from air channels 25 further break up the slurry reducing it into a fog. The amount of coating applied can be adjusted and the penetration of the coating optimized by adjusting flow rates and the angle at which the coating is directed toward the paper (page 4, line 29 through page 5, line 25). After the coating is applied to the paper, the paper is conveyed through doctor 32. Doctor blade 32 is pressed against the paper, which is backed by roll 33. Doctor 32 functions to meter or level the coating by brushing or removing some slurry (page 6, lines 16-27). The process gives a smoother surface to the paper than not using the combination of doctor 32 and spraying (page 7, lines 14-19).

Rosenberger et al. disclose a method and apparatus for spraying waterborne coatings under varying conditions (the Fig.) including a method of inline adjustment of waterborne coating compositions held in reservoir 1 to compensate for the relative humidity of the environment in spray zone 13. To compensate for measured humidity in spray zone 13 the apparatus alters the viscosity of the coating composition. The viscosity is altered by adding a viscosity altering additive such as water. Humidity sensor 14 may be read manually or it may transmit an electrical signal that corresponds to the relative humidity. Relative humidity, as measured by humidity

sensor 14, is the basis for selecting the amount of additive from reservoir 2 or 3 that is added to the composition held in reservoir 1 (column 3, line 13 through column 4 line 5). The spray device may include a conventional air atomizing spray device, an electrostatic air atomizing spray device or an electrostatic rotary atomizing device (column 5, lines 1-3). The proportionate flow rates of water and the coating composition are selected to provide a predetermined evaporation rate of water from the coating under environmental conditions in spray area 13 (column 7, lines 11-18).

Govindan discloses a process for the spray application of aqueous paints by controlling the temperature of the air in a paint spray zone of a spray booth including a humidifier that utilizes a water spray or steam to increase the water content in the air. The humidifier is coupled to and controlled by the computer controller. The air is moved in the area where the temperature and humidity is controlled (column 3, line 60 through column 4, line 30). The Examiner indicates that the air is humidified before it enters the spray booth (page 3 of the Office Action).

In contrast, claim 1, recites in part:

providing a spray device ... said housing having a vapor supply line configured to supply vapor, said vapor supply line located substantially opposite from the direction of spray of said spray device, said vapor supply line directing a vapor toward the back of said spray device.

(Emphasis added) Applicant submits that such an invention is neither taught, disclosed nor suggested by Sundholm et al., Rosenberger et al., Govindan or any of the other cited references, alone or in combination, and includes distinct advantages thereover.

Sundholm et al. and Rosenberger et al. each teach the spraying of coatings and Govindan teaches the heating and humidification of moving air in a spray booth. However, Sundholm et al., Rosenberger et al. and Govindan, separately or in combination, fail to disclose or suggest providing a spray device with a housing having a vapor supply line configured to supply a vapor, the vapor supply line located substantially opposite from the direction of spray of the spray

device, the vapor supply line directing a vapor toward the back of the spray device, as is recited in part in claim 1. The Examiner indicates that neither Sundholm et al. nor Rosenberger et al. teach directing a vapor towards the back of the spray device. Applicant respectfully points out that neither does Govindan teach directing a vapor towards the back of the spray device. Govindan teaches the control of temperature and humidification of air in a spray booth. The distinction that Applicant points to is that vapor is being supplied toward the back of the spray device and that differs from the use of an air handling unit which moves air around the spray booth of Govindan. The movement of air of Govindan will cause air turbulence, which leads to a degradation in the surface quality of the web. Applicant's invention includes a housing partially surrounding the spray device to substantially prevent the movement of air that is taught by Govindan. Further, Applicant's invention directs vapor toward the back of the spray device, the motion of which advantageously surrounds the spray device and the spray therefrom.

An advantage of Applicant's invention over Sundholm et al., Rosenberger et al., Govindan and the other cited references is that the housing reduces dispersion of the vapor. Another advantage of the Applicant's invention is that the flow of the vapor comes around the spray device from behind the back of the spray device toward the fiber web, thereby reducing turbulence in the application area. Accordingly, Applicant submits that claim 1, and claims 2-4, 8, 10 and 11 depending therefrom, are in condition for allowance, which is hereby respectfully requested.

Responsive to the rejection of claims 1-4, 8, 10 and 11 under 35 U.S.C. §103(a) as being unpatentable over Sundholm et al. in view of U.S. Patent No. 4,396,651 (Behmel et al.), and Govindan, Applicant respectfully traverses the rejection and submits that claims 1-4, 8, 10 and 11 are in condition for allowance.

Behmel et al. disclose a process for spraying water-dilutable paint including two-component spray guns whereby the outlay of the spray nozzles guarantees a thorough blending of the two components to provide a uniform film formation. Ancillary nozzles are mounted along side of a main nozzle, in order that the droplets of the material atomized by the nozzles either covers the main paint stream and/or blends with the droplets of the main stream without melting or blending homogeneously therewith. The ancillary nozzles supply air along side of the main nozzle (column 2, lines 46-68). Along with the atomization of paint, a quantity of water is atomized as adjusted by the humidity and/or spray room temperature, thereby creating a micro-climate. Additives are applied through ancillary nozzles directly and immediately to the surface of the paint droplets (column 3, lines 8-27).

In contrast, claim 1, recites in part:

providing a spray device ... said housing having a vapor supply line configured to supply vapor, said vapor supply line located substantially opposite from the direction of spray of said spray device, said vapor supply line directing a vapor toward the back of said spray device.

(Emphasis added) Applicant submits that such an invention is neither taught, disclosed nor suggested by Sundholm et al., Behmel et al., Govindan or any of the other cited references, alone or in combination, and includes distinct advantages thereover.

Sundholm et al. teach the spraying of coatings, Behmel et al. teach the spraying of water-dilutable paint having ancillary nozzles along side of a main nozzle and Govindan teaches the heating and humidification of moving air in a spray booth. However, Sundholm et al., Behmel et al. and Govindan, separately or in combination, fail to disclose or suggest providing a spray device with a housing having a vapor supply line configured to supply a vapor, the vapor supply line located substantially opposite from the direction of spray of the spray device, the vapor supply line directing a vapor toward the back of the spray device, as is recited in part in claim 1.

The Examiner indicates that neither Sundholm et al. nor Behmel et al. teach directing a vapor towards the back of the spray device. Applicant respectfully points out that neither does Govindan teach directing a vapor towards the back of the spray device. Govindan teaches the control of temperature and humidification of air in a spray booth. The distinction that Applicant points to is that vapor is being supplied toward the back of the spray device and that differs from the use of an air handling unit which moves air around the spray booth of Govindan. The movement of air of Govindan will cause air turbulence, which leads to a degradation in the surface quality of the web. Applicant's invention includes a housing partially surrounding the spray device to substantially prevent the movement of air that is taught by Govindan. Further, Applicant's invention directs vapor toward the back of the spray device, the motion of which advantageously surrounds the spray device and the spray therefrom.

An advantage of Applicant's invention over Sundholm et al., Behmel et al., Govindan and the other cited references is that the housing reduces dispersion of the vapor. Another advantage of the Applicant's invention is that the flow of the vapor comes around the spray device from behind the back of the spray device toward the fiber web, thereby reducing turbulence in the application area. Accordingly, Applicant submits that claim 1, and claims 2-4, 8, 10 and 11 depending therefrom, are in condition for allowance, which is hereby respectfully requested.

For the foregoing reasons, Applicant submits that no combination of the cited references teaches, discloses or suggests the subject matter of the amended claims. The pending claims are therefore in condition for allowance, and Applicant respectfully requests withdrawal of all rejections and allowance of the claims.

In the event Applicant has overlooked the need for an extension of time, an additional extension of time, payment of fee, or additional payment of fee, Applicant hereby conditionally

petitions therefor and authorizes that any charges be made to Deposit Account No. 20-0095,  
TAYLOR & AUST, P.C.

Should any question concerning any of the foregoing arise, the Examiner is invited to telephone the undersigned at (260) 897-3400.

Respectfully submitted,



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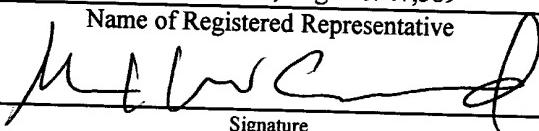
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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, Washington, DC 20231, on: March 28, 2003.

Max W. Garwood, Reg. No. 47,589

Name of Registered Representative



Signature

March 28, 2003

Date